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U.S. Dept. Of Commerce
U.S. Patent Trademark Office (USPTMO)
COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Based on recently received patent preparation information from your examiner, Ms. A. Elve, enclosed is an amended specification further supporting claim 1 of 3 claims to my US Patent Application Number 20030155326A1, filing August 21, 2003, "Reducing tread separation in Tires" which has been rejected as unpatentable over DD127358 (abstract).

Yours truly,

Nicholas M. Masich

NICHOLAS M. MASICH

SEPECIFICATION

(a) TITLE OF AMENDED INVENTION

Reducing tread separation in tires

(b) CROSS REFERENCE TO RELATED APPLICATIONS

Non-applicable

(c) STATEMENT REGARDING FEDERALLY SPONSERED RESEARCH OR DEVELOPMENT

Non-applicable. I urge federal subsidization of development testing of patent applications prepared by individuals primarily with industrial and science backgrounds at low costs to increase US domestic manufacturing capability now down to number 4 worldwide.

(d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.

Non-applicable

(e) BACKGROUND OF THE INVENTION

(1) This invention makes one change in current production lines in the spinning of continuous synthetic polymer filaments with changed surface characteristics that are twisted into yarns and cords used in tire production thus increasing tire life and reducing tread separation in tires.

(2) Description of related art

DD127358 (abstract) describes a nozzle plate (spinneret) using laser-piercing to form holes through which molten glass is extruded to form filaments that are cylindrically shaped and devoid of tensile properties used mainly as insulation matting. JP (06210858A) also disclosed an inkjet nozzle in which holes are formed by laser piercing to form glass filaments. Neither of these inventions describes the manufacture of filaments or the relationship to tire treads.

(f) Brief summary of the invention

The general idea of my claimed invention is to substitute laser-pierced holes in the plates of spinnerets through which viscous polymer fluids flow to produce continuous synthetic polymer filaments with surface irregularities uncharacteristic of glass filaments which are twisted into yarns and cords with significant increases in cord to rubber bonding thus increasing tire life and reducing the incidence of tread separation in lives.

(g) BRIEF DESCRIPTION OF SEVERAL VIEWS OF THE DRAWINGS.

Non-applicable

(h) DETAILED DESCRIPTION OF THE INVENTION

Laser piercing of small diameter holes in thin metal plates was demonstrated and patented in the early 1960s.

Glass filaments from spinnerets using laser pierced holes at molten glass temperatures are smooth and cylindrically shaped and devoid of tensile properties of synthetic polymer filaments (nylon and Kevlar for examples). In my invention I claim using laser pierced holes in place of presently used mechanically drilled holes in the plates of spinnerets through which synthetic polymer fluids flow produce continuous synthetic filaments with surface irregularities that are twisted into yarns and cords. These surface irregularities are in the form of tiny ridges and valleys that increase cord to rubber bonding thus increasing significantly tire life especially when operated at higher speeds over bumpy roads and reducing the incidence of tread separation in tires

(i) CLAIM OR CLAIMS (commencing on separate sheet)

(j) ABSTRACT OF THE DISCLOSURE

(Commencing on a separate sheet)

(k) SEQUENCE LISTING

Non applicable

CLAIM

What I claim in my invention is that substituting laser pierced (burnt) holes in place of mechanically drilled holes in the plates of spinnerets in present production lines through which viscous polymer fluids flow produce surface irregularities in the form of tiny longitudinal ridges and valleys in the spun continuous synthetic polymer filaments (nylon and Kevlar for examples). These are then twisted into yarns and cords used in tire production which improve cord to rubber bonding with significant increases in tire life and reduction in the incidence of tread separation in tires.

(j) ABSTRACT OF THE DISCLOSURE

This amended abstract describes one new improvement in present production lines substituting laser pierced (burnt) smaller diameter holes inn place of mechanically drilled holes in the plates of spinnerets in present production lines through which viscous polymer fluids flow to produce tiny longitudinal ridges and valleys characteristic of smooth continuous synthetic polymer filaments (nylon and kevlar for examples) with increased cord to rubber bonding thus significantly increasing tire life and reducing tread separation in tires especially when operated at higher speeds over bumpy roads.

(k) SEQUENCE LISTING

Non-applicable